

REMARKS

Claims 2, 3, 5, 9-22, 29, 34, 35, 37-40 and 45 are now active in this application. No new matter has been added.

The indication that claims 9-22 and 37 are allowable is acknowledged and appreciated.

REJECTION OF CLAIMS UNDER 35 U.S.C. § 103

I. Claims 2, 5, 29, 38-40 and 45 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318).

Independent claims 29 and 45 have the following limitation:

in either of before and after the modification, any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines.

The Examiner contends that Matsuura, col. 20, lines 3-7, 61-76 and 18-23 teaches “modifying the lines in response to a user instruction that includes an adding or a movement of a line so that the plurality of lines still corresponding to contour of the model.” However, the portions pointed out by the Examiner describe a processing called “internal line generation”. The internal lines AAA and BBB are generated to *cross* the plurality of lines. Therefore, this does not agree with the above noted limitation recited in claims 29 and 45.

In response to this argument, the Examiner notes that at column 12, lines 1-2, 7-9 and 11-13, “Matsuura teaches the capability to add more lines (dd) to the mesh (bb) (fig. 17 and 19), the added lines do not cross any line of the mesh (bb) according to the input instruction of the user (col. 11, lines 65-67). Further, Matsuura teaches allowing the user to input the internal lines (col. 18-29; fig. 38).” While the Examiner acknowledges that the

internal lines as illustrated in fig. 38 cross the plurality of lines (as noted by the applicant), the internal lines taught by Matsuura can clearly be drawn without crossing any existing lines. The Examiner specifically asserts that "Because Matsuura teaches that the internal lines are generated according to the coordinates the user provides (col. 20, lines 18-28), when the user provides the coordinates that does not cross the existing lines, the internal lines will not cross the existing lines. Since the internal lines are generated at a position designated by the user (col. 20, lines 18-28), the internal line will not cross the exiting lines when designated so by the user."

However, the problem is that the Examiner is attempting to read the present claims on the methodology disclosed in Matsuura, which is quite different from what is presently being claimed (and disclosed). More to the point, the methodology disclosed in Matsuura does not recognize the need that in either of before and after the modification, any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines. The fact that the internal lines AAA and BBB of FIG. 38 of Matsuura are generated specifically to *cross* the plurality of lines clearly evinces that Matsuura does not intend that after modification (as the Examiner interprets col. 20, lines 3-7, lines 61-67; col. 20- lines 19-23 as corresponding to the step of "modifying" (see page 3, second paragraph under #3)) any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines.

It should be recognized that the fact that the prior art could be modified so as to result in the combination defined by the claims at bar would not have made the modification obvious unless the prior art suggests the desirability of the modification. *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986).

Recognizing, after the fact, that such a modification would provide an improvement or advantage, without suggestion thereof by the prior art, rather than dictating a conclusion of obviousness, is an indication of improper application of hindsight considerations. Simplicity and hindsight are not proper criteria for resolving obviousness. *In re Warner*, 379 F.2d 1011, 154, USPQ 173 (CCPA 1967).

It is clearly evident that Matsuura does not suggests the desirability that after performing modification, any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines. Thus, the Examiner's contention that it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to adjust the expansion factor of Matsuura to zero in order to obtain the generated lines that correspond exactly to the contours of the model is an example of improper application of hindsight considerations to reject the claims.

Furthermore, it is also well established in MPEP § 2143.01, last paragraph that the proposed modification cannot change the principle of operation of a reference. "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teaching of the references are not sufficient to render the claims *prima facie* obvious." Additionally, the second to the last paragraph in MPEP § 2143.01 states that the "**proposed modification cannot render the prior art unsatisfactory for its intended purpose**".

If Matsuura were modified so that after performing modification, any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines, the embodiment of the invention disclosed in FIG. 38 of Matsuura, would not be possible.

At any rate, claims 29 and 45 are amended to clarify that “both before and after the modification, any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines.”

In view of the above, independent claims 29 and 45, as well as claims 2 and 5 depending from claim 29, are patentable over Matsuura.

Independent claim 38 recites, *inter alia*:

receiving a first electronic data of a three-dimensional model of an object which has been acquired on the object;

generating a second electronic data that represents *a first set of uncrossed lines* corresponding exactly to first portions on a surface of the three-dimensional model, wherein a capacity of the second electronic data is smaller than that of the first electronic data; and

generating, from the second electric data, a third electronic data that represents *a second set of uncrossed lines* corresponding exactly to second portions on the surface of the three-dimensional model, the second portions including at least one portion different from any one of the first portions...  
(Emphasis added)

Thus, like independent claims 29 and 45, independent claim 38 requires that both before (*a first set of uncrossed lines*) and after the modification (*a second set of uncrossed lines*), any one of the plurality of lines do not cross with any one of the remaining ones of the plurality of lines. Thus, independent claim 38 (an claim 39 depending from claim 38) is patentable over Matsuura for similar reasons as to why independent claims 29 and 45 are patentable over Matsuura.

**II.** Claim 3 is rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318) in view of Letcher, Jr. (U.S. Patent No. 5,627,949).

The rejection is respectfully traversed, as claim 3 depends from claim 2. Thus, claim 3 is patentable over Matsuura also, even when considered in view of Letcher, Jr.

III. Claims 34 and 35 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsuura (U.S. Patent No. 5,615,318) in view of Sato et al. (U.S. Patent No. 5,754,680).

The rejections are respectfully traversed, as claim 34 and 35 both depend from claim 2. Thus, claims 34 and 35 are patentable over Matsuura also, even when considered in view of Letcher, Jr.

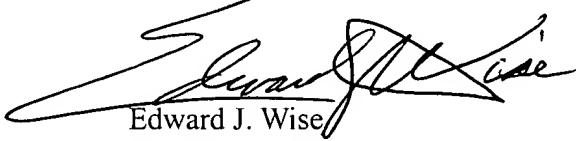
### **CONCLUSION**

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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**Date: November 10, 2003**